Patent claims

1. An apparatus for feeding a gaseous and/or liquid medium to a rotating pressurized system, comprising a stationary seal-head housing (1) with at least one connection port (2) for the medium connected to a connection passage (2.1) inside the seal-head housing (1), and a rotor (3) also inside the housing (1) and connected with the pressurized system, and with a stator seal (5) on an end of the connection passage (2.1) and a rotor seal (6) on an end of the rotor (3), the stator seal (5) and rotor seal (6) being coaxial of the rotor (3) and bearing on each other, characterized in that near the stator and rotor seals (5 and 6) there is a thermally influenced strain element (7) that shifts the stator and rotor seals (5 and 6) toward and/or away from each other in accordance with temperature.

2. The apparatus according to claim 1 characterized in that the strain element (7) is formed as a sleeve that has an end turned toward the pressurized system and fixed on the seal-head housing (1) and an opposite end turned toward the stator seal (5) and bearing against a coupling ring (8) connected with the stator seal (5).

3. The apparatus according to claim 2, characterized in that the strain element (7) has at least on its inner surface a heat-absorbing surface coating and/or surface increasing structure.

4. The apparatus according to claim 2 or 3, characterized in that the coupling ring (8) is urged by a spring against the strain element (7).

5. The apparatus according to one of claims 2 to 4, characterized in that the coupling ring (8) surrounds an axially shiftable seal support (10) carrying the stator seal (5) and a stator spring (11) presses it and the stator seal (5) on the axially fixed rotor seal (6).

6. The apparatus according to claim 5, characterized in that the seal support (10) has an annular rim (10.1) projecting radially toward the coupling ring (8).

7. The apparatus according to claim 4 or 6, characterized in that the coupling ring (8) is made of a material with a low coefficient of thermal expansion and the seal support (10) of a material with a greater coefficient of thermal expansion and that at normal operating temperature there is a narrow annular gap between the coupling ring (8) and the seal support (10).

8. The apparatus according to at least one of claims 5 to 7, characterized in that the annular rim (10.1) of the seal support (10) is conically tapered at its end toward the stator seal (5).

9. The apparatus according to at least one of claims 1 to 8, characterized in that the outer diameter of the part of the seal support (10) set in the seal-head housing (1) corresponds to the diameter of the rotor bore holding the rotor (3) and the bore diameter of the rotor seal (6) and the stator seal (5) are the same.

10. The apparatus according to at least one of claims 1 to 9, characterized in that flanking the bearing (4) there is a pair of seal gaps (12) each with a respective annular passage to which a blocking medium, e.g. compressed air, is supplied and that each have at least a partial connection to a leak fitting.

11. The apparatus according to at least one of claims 1 to 10, characterized in that a spring presses the rotor seal axially against a rim.

12. The apparatus according to at least one of claims 5 to 11, characterized in that between the strain element (7) and the movably mounted seal support (10) there is a rotary thermally actuatable coupling.

13. The apparatus according to claim 12, characterized in that the coupling is formed by two relatively rotatable coupling disks (16 and 17) of which at least one is formed as a wedge disk with an angularly extending wedge face (17.1).

14. The apparatus according to claim 13, characterized in that for relative rotation a spiral-shaped bimetallic element (18) is secured at an end to one of the coupling disks (16 and 17).

15. The apparatus according to claims 1 to 11, characterized in that a stress-relief ring (14) is provided between the coupling ring (8) and the seal support (10).

16. The apparatus according to claim 15, characterized in that the coupling ring (8) is made of a material of low coefficient of thermal expansion and the stress-relief ring (14) of a material of higher coefficient of thermal expansion and that at normal operating temperature there is a small annular gap between the coupling ring (8) and the stress-relief ring (14).

17. The apparatus according to claim 16, characterized in that a specially shaped annular rim (14.1) of the stress-relief ring (14) is continuously pressed endwise by springs (15) against the seal support (10) and that heat is conducted by metal-to-metal contact between the seal support (10) and the stress-relief ring (14).